

REMARKS

Claims 1-44 and 57-110 are pending in the above-captioned patent application after this amendment. Claims 45, 48, 50-57 and 60-63 have been rejected. Claims 46, 47, 49, 58 and 59 have been objected to as being dependent upon rejected base claims, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. Claims 1-44 have been allowed.

The Applicants respectfully disagree with the rejection of claims 45, 48, 50-57 and 60-63. However, the Applicants have cancelled claims 45-56 without prejudice, and added claims 64-110 for the purpose of expediting the patent application process in a manner consistent with the goals of the Patent Office (65 Fed. Reg. 54603), and/or to clarify what the Applicants regard as the present invention.

Support for new claims 64-110 can be found throughout the originally filed specification. In particular, support for new claims 64-110 can be found in the specification at page 9, lines 10-12, in Figures 1 and 11, and in originally filed claims 1-63.

New claim 64 is based on original claim 46 rewritten in independent form. Therefore, new claim 64 is not narrower in scope than originally filed claim 46. Original claim 46 was found to contain patentable subject matter. Accordingly, new claim 64 is considered to be in condition for allowance.

New claim 77 is based on original claim 49 rewritten in independent form. Therefore, new claim 77 is not narrower in scope than originally filed claim 49. Original claim 49 was found to contain patentable subject matter. Accordingly, new claim 77 is considered to be in condition for allowance.

New claim 86 is based on original claim 51 rewritten in independent form.

Therefore, new claim 86 is not narrower in scope than originally filed claim 51.

No new matter is believed to have been added by this amendment.

Reconsideration of the application is respectfully requested in view of the above-recited amendments and the arguments set forth below.

Allowable Subject Matter

Claims 46, 47, 49, 58 and 59 have been objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. Claims 1-44 have been allowed.

As stated above, new claim 64 is based on original claim 46 rewritten in independent form. Original claim 46 was found to contain patentable subject matter. Accordingly, new claim 64 is considered to be patentable. Because new claims 65-76 depend either directly or indirectly upon new claim 64, they are also considered to be patentable.

Additionally, as stated above, new claim 77 is based on original claim 49 rewritten in independent form. Original claim 49 was found to contain patentable subject matter. Accordingly, new claim 77 is considered to be patentable. Because new claims 78-85 depend either directly or indirectly upon new claim 77, they are also considered to be patentable.

Rejections Under 35 U.S.C. § 102(a)

Claims 45, 48 and 50-56

Claims 45, 48 and 50-56 are rejected under 35 U.S.C. §102(a) as being anticipated by U.S. Patent No. 6,008,885 issued to Takahashi et al. ("Takahashi et al."). The Applicants have cancelled claims 45-56 without prejudice by this amendment. Accordingly, the rejection of claims 45, 48 and 50-56 under 35 U.S.C. §102(a) is moot. However, as stated above, new claim 86 is based on original claim 51 rewritten in independent form. The Applicants respectfully traverse the rejection of new claim 86, and submit that new claim 86 is patentable over Takahashi et al.

According to the Patent Office, Takahashi et al. discloses an exposure apparatus and method for transferring an image set movably by a stage (1) onto a device, the exposure apparatus comprising a base (10), an optical assembly including a center frame and a first upper base mount (9), and an optical isolation system (11) that secures the optical assembly to the base assembly including a support (12) that is secured to the center frame wherein the first support and a proximal section of the first upper base mount are substantially aligned along a z-axis. The Patent Office further provides that Takahashi et al. discloses flexible supports, movers (4, 3), and position sensors (21, 23).

However, in Takahashi et al., neither of the position sensors (21, 23) are substantially aligned along the Z axis with the first support and the first upper base mount. Thus, Takahashi et al. does not disclose a sensor column including a first sensor mount that secures the sensor column to the optical frame, where the first sensor mount is substantially positioned along a common Z axis with the first support and a proximal section of the first upper base mount. Further, Takahashi et al. does not disclose a base

assembly including a base frame that defines a frame aperture that is sized and shaped to receive a portion of the optical assembly.

In contrast to the cited reference, claim 86 of the present invention requires "(a)n exposure apparatus ... comprising: a base assembly that includes at least a portion of the stage assembly; an optical assembly that includes an optical frame, an optical device, a stage base and a sensor column, the optical device directs the beam of light and the stage base supports a portion of the stage assembly, the optical frame including a center frame and a first upper base mount that supports the stage base, the sensor column including a first sensor mount that secures the sensor column to the optical frame; and an optical isolation system that secures the optical assembly to the base assembly, the optical isolation system including a first support that is secured to the center frame, the optical isolation system reducing the effect of vibration of the base assembly causing vibration on at least one of the optical assembly and the optical device, wherein the first support, a proximal section of the first upper base mount and the first sensor mount are substantially aligned along a first Z axis."

These features are not taught or disclosed by Takahashi et al. Accordingly, new claim 86 is believed to be patentable under 35 U.S.C. §102(a). Additionally, the Applicants respectfully submit that any potential 35 U.S.C. §103 rejection of new claim 86 is not appropriate because Takahashi et al. does not teach or suggest the features of new claim 86. Because new claims 87-97 depend either directly or indirectly upon new claim 86, they are also considered to be patentable over Takahashi et al.

Claims 45, 57 and 60-63

Claims 45, 57 and 60-63 are rejected under 35 U.S.C. §102(a) as being anticipated by U.S. Patent No. 6,069,683 issued to Iwamoto ("Iwamoto"). The Applicants, as noted above, have cancelled claim 45 without prejudice by this amendment. Accordingly, the rejection of claim 45 under 35 U.S.C. §102(a) is moot. The Applicants respectfully traverse the rejection of claims 57 and 60-63, and submit that claims 57 and 60-63 are patentable over Iwamoto.

According to the Patent Office, Iwamoto discloses an exposure apparatus and method for transferring an image set movably by a stage (2) onto a device, the exposure apparatus comprising a base (14), an optical assembly (10) including a center frame and a first upper base mount (27), and an optical isolation system (18) that secures the optical assembly to the base assembly including a support (12) that is secured to the center frame wherein the first support and a proximal section of the first upper base mount as well as sensor mount (8) are substantially aligned along a z-axis.

The Applicants provide that Iwamoto discloses an exposure apparatus comprising a reticle stage 11 which holds a reticle 2, the reticle stage 11 being mounted on a reticle stage base 27; a wafer stage 5 which holds a wafer 6, the wafer stage 5 being mounted on a wafer stage base 19; a projection optical system 3 mounted on a barrel base 10, the barrel base 10 supporting the reticle stage base 27; and a base frame 17 that supports the wafer stage base 19 and the barrel base 10 through three dampers 18 that secure the base frame 17 to the barrel base 10. (Iwamoto column 3, lines 21-49, and Figure 1).

In the exposure apparatus disclosed in Iwamoto, all portions of the reticle stage assembly, all portions of the wafer stage assembly, and the optical assembly are all

supported on the same three dampers relative to the base frame. Stated another way, there are no dampers between the optical assembly and the stage assemblies to isolate the optical assembly from the stage assemblies. Further, Iwamoto does not disclose a base assembly including a base frame that defines a frame aperture that is sized and shaped to receive a portion of the optical assembly.

In contrast to the cited reference, claim 57 of the present invention requires "(a)n exposure apparatus ... comprising: a base assembly that includes at least a portion of the stage assembly; an optical assembly that includes an optical frame, an optical device and a sensor column, the optical device directs the beam of light, the optical frame including a center frame, the sensor column including a first sensor mount that secures the sensor column to the optical frame; and an optical isolation system that secures the optical assembly to the base assembly, the optical isolation system including a first support that is secured to the center frame, the optical isolation system reducing the effect of vibration of the base assembly causing vibration on at least one of the optical assembly and the optical device, wherein the first support and the first sensor mount are substantially aligned along a first Z axis."

These features are not taught or suggested by the cited reference. As a result, claim 57 is believed to be patentable. Further, claims 58-63 depend either directly or indirectly from claim 57. Therefore, claims 58-63 are also believed to be patentable.

Remaining New Claims

New claims 98-110 have also been added by this amendment. These claims are of a slightly different scope than previously pending claims. However, these claims are considered to be patentable in view of the cited references.

In contrast to the cited references, new claim 98 of the present invention requires "(a)n exposure apparatus ... comprising: an optical assembly that includes an optical frame, an optical device and a stage base, the optical device directs the beam of light and the stage base supports a portion of the stage assembly, the optical frame including a center frame and a first upper base mount that supports the stage base; a base assembly that includes a base frame and at least a portion of the stage assembly, the base frame defining a frame aperture that is sized and shaped to receive a portion of the optical assembly; and an optical isolation system that secures the optical assembly to the base assembly, the optical isolation system including a first support that is secured to the center frame, the optical isolation system reducing the effect of vibration of the base assembly causing vibration on at least one of the optical assembly and the optical device, wherein the first support and a proximal section of the first upper base mount are substantially aligned along a first Z axis."

These features are not taught or suggested by the cited references. As a result, new claim 98 is believed to be patentable. Further, new claims 99-110 depend either directly or indirectly from new claim 98. Therefore, new claims 99-110 are also believed to be patentable.

Version with markings to show changes made:

In the Claims:

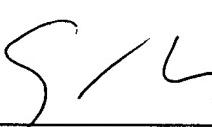
Claims 45-56 have been cancelled without prejudice and new claims 64-110 have been added by this amendment.

CONCLUSION

In conclusion, the Applicants respectfully assert that claims 1-44 and 57-110 are patentable for the reasons set forth above, and that the application is now in a condition for allowance. Accordingly, an early notice of allowance is respectfully requested. The Examiner is requested to call the undersigned at 858-456-1951 for any reason that would advance the instant application to issue.

Dated this 29th day of October 2002.

Respectfully submitted,



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